EDITORIAL

The Frontispiece

"Fundamental Steps of a Pure Food Foundation for the Confectionery Industry"

THE illustration on front cover of this issue is the artist's visualization of the idea and ideals which have prompted the launching of a campaign for proper standards of Cleanliness and Sanitation in the confectionery industry.

We have endeavored to bring out the fundamental idea that consumer demand is for Pure Candy produced by an industry with a pure food foundation.

The first and fundamental step in the Pure Food foundation is a "Sanitary Conscience." All the sanitary laws, codes and regulations on our statutes are woefully limited in their power to influence and enforce proper standards of sanitation unless the manufacturers of confectionery possess an instinctive desire to maintain the highest possible standards of Cleanliness and Sanitation all through the manufacture and handling of their products.

The other steps in this Pure Food Foundation all rest on a Sanitary Conscience. In other words, clean factories, clean equipment, clean materials, clean workers and clean ethics will naturally follow when the executives and workers of a firm possess the ideals of Cleanliness and Sanitation and have the conviction and determination to back them up in their daily work—a conscience which zealously guards their product in a way which is consistent with what the public expects of every food manufacturer.

The Sanitary Situation in the Confectionery Industry

WE BELIEVE that as a rule the successful, reputable manufacturers in our industry have a sanitary consciousness which prompts them to maintain a high standard of Sanitation and Cleanliness to the best of their knowledge. In fact, there are many confectionery plants which have received the very highest commendations from food inspectors and Boards of Health. It was significant that during a recent national meeting of Food Commissioners and factory inspectors in Chicago that a confectionery plant was selected by the program committee for an official tour by the delegation because of its reputation for being a model plant from the standpoint of Cleanliness, Sanitation and Industrial Hygiene.

As in all food industries, we have an element in the confectionery field which is not in accord with the better ideals and standards of the industry. We can face that fact frankly, realizing that all food industries have such a problem in common.

We find, too, that a review of the state laws and city ordinances reveals the fact that the candy industry is conspicuously in the background as far as special regulations are concerned which specifically fit our industry. There are "model bakery laws," and special regulations applying to the dairy industry. There are also technical requirements covering the business of meat packing and all handling of meat products. There are special regulations for restaurants—confectioneries coming in this class in some instances. Only in a very few states do we find special regulations covering the confectionery industry; Washington, Wisconsin, Ohio, and there may be a few others which have not come to our notice as yet becauce there are some states from which we have not received complete data. It would seem then that the drafting of a model confectionery law would be in order.

Why the Highest Standards of Cleanliness and Sanitation Should Prevail in the Manufacture of Candy

IN THE first place, the fact that confectionery is a food with the highest caloric value is reason enough for placing our industry on at least the same level with other food industries from the standpoint of sanitation. Now, in addition to being a food, candy is a "messenger of sentiment," but it is naturally presupposed that any candy which carries a sentimental and romantic appeal is manufactured under the most ideal sanitary conditions and is a model of purity. Anything short of this standard would not substantiate and be consistent with the advertising which the Western Confectioners' Association has so ably initiated and launched and offered to the entire industry for adoption.

Furthermore, confectionery is necessarily subjected to more or less handling after it leaves the cooking processes and, therefore, there are more sanitary hazards in our industry than is the case with canned goods, bakery products and other foods in the manufacture of which "are not touched by human hands." There are, however, some notable exceptions to this rule; for instance, popcorn confections, some hard candies and specialties which are made and packed with automatic machinery and sealed in containers. But as a rule the product

The Manufacturing Confectioner's Campaign for Cleanliness, Sanitation and Hygiene

in the Manufacture and Distribution of Confectionery

Objectives

To foster a Sanitary Conscience throughout the entire confectionery industry.

To pave the way for a successful campaign of national consumer advertising by the candy industry by encouraging the adoption of a code of Cleanliness and Sanitation by which the manufacturers of pure and wholesome candy may be identified.

To evolve a practical working plan which will elevate, expand and safeguard the confectionery industry.

Program for 1925

1st Obtain an accurate and comprehensive survey of Sanitary Conditions, Problems and Hazards in the Confectionery industry.

2nd Draft a Sanitary Code and an Inspection Report Blank or Score Card, for the convenient guidance of executives in checking up on the Accepted Sanitary standards of the plant. Publish a Manufacturing Confectioner's Manual of Sanitation and Cleanliness.

3rd Endeavor to have the Subject of Plant Cleanliness and Sanitation included on the programs and open discussions at every convention and conference in the industry this year and provide a speaker if need be.

of our industry is not subjected to sterile processing.

The third reason why the highest standards of purity and cleanliness should prevail in the manufacture and distribution of confectionery is because it is sold through a greater number and variety of retail outlets than any other food product—almost everybody sells candy; children buy it as soon as they are big enough to toddle out on the street alone and before these little folks develop a sense of discrimination. The kiddies do not buy canned goods, meat, milk, bread or any other foods which are so scrupulously protected by sanitary regulations and frequent inspections.

What to Do

Therefore, it is all essential that not only the manufacturers, but the jobbers and retail distributors of candy also have a keen sanitary conscience which will prompt them first to give preference in their purchasing to manufacturers who maintain clean, sanitary plants and then to zealously guard the sanitary conditions under which the candy is handled and displayed. Candy salesmen can help retailers imbibe the sanitary idea and make their candy department radiate cleanliness and purity.

But, of course, the manufacturers with a sanitary conscience must take the initiative and generate enough inspiration and enthusiasm to not only saturate their own respective factories and workers and salesmen with the ideals of Sanitation but also radiate the idea of cleanliness and purity to the candy jobbers and dealers who, in turn, will reflect the atmosphere of pure candy to the consuming public.

The most potent force in industry is its ideals. Let's harness this force and pull together to elevate, expand and safeguard the confectionery industry.

The Production Conference

On account of some unforseen conditions The Manufacturing Confectioners' Dinner and Conference scheduled for January 7th was postponed to the 14th, making it just too late to report for this issue.

"The Sanitary Conscience"

"IN THE candy industry the greatest single need is for a sanitary conscience. This should begin with the president and radiate to the least important employee. This conscience leads every employee to accept a personal responsibility to the company and to the consumer. This sanitary conscience must be the outgrowth of an intelligent appreciation of the sanitary hazards involved in candy making. In part this comes through discipline, in part through example, in part through factory education, and in part through the effects of a clean environment. A military company of goats commanded by a lion becomes a company of lions; so in the candy industry a group of inferior workers supervised by a foreman with a sanitary conscience may become the biggest single factor in the plant's sanitary procedures.

"Such a foreman can secure from his men proper concepts of cleanliness and thus is on the selling force or the growing force of his company.

"The work environment is a large factor in producing a sanitary conscience. Recently in our experience, a severely hurt man was necessarily sent to a third-class hospital. He required an unusual operation. A good doctor was called in, in the belief that his ability would make up for the shortcomings of the hospital. Instead, when the surgeon viewed his scanty and dirty work facilities, his poorly trained nurses and assistants, he unconsciously slumped

into the slovenly ways of his environment and performed a careless and disastrous operation.

"It is hard to start a candy conscience in a dark, dirty, disorderly workroom, but once started and encouraged this conscience should become an ever-present, second nature in the doing of the daily work. In all places visited by us this need for a sanitary conscience was the foremost requisite for improvement.

INDUSTRIAL HEALTH CONSERVANCY LABORATORIES.

(The above is quoted from the first chapter of a report on a special investigation of the confectionery industry by The Industrial Health Conservancy Laboratories of Cincinnati who have been retained to co-operate closely with us in our campaign for Sanitation. See page 40 of this issue for information regarding their personnel and services.—Editor.)

The Psychology of Cleanliness and Sanitation

THE adoption of a washable work garment is perhaps one of the first requisites of a plant with well organized policies and standards of sanitation. There seem to be three distinct advantages of a standardized work garment besides the first and obvious reason—sanitary production. There is an interesting psychology about a uniform. A uniform meaning cleanliness, it is natural that employees will subconsciously get the sanitary idea and do their work in a way which is consistent with the atmosphere of cleanliness which the uniform suggests.

Furthermore, there is a sociological aspect to this matter of employee's dress. There is a very distinct advantage in the equality of dress among the female factory workers. There is something very pleasing about this uniformity of dress which gives a general effective appearance to the plant. Then, of course, these uniforms are an economy because they save the wear and tear of employees' regular clothes.

Any one of these is sufficient reason for standardized shop apparel, but over and above all else is the Sanitary Protection to products. Where operators on food products, especially candy, are allowed to wear regular street clothes, grave dangers are involved by reason of unknown environment outside the factory, to which such clothes may have been subjected.

A work garment must be washable to be sanitary. Many styles of simple, neat designs are procurable at little cost when bought by the manufacturers in wholesale lots, permitting resale to employees at cost. Such saving to them through their employer's quantity price is a factor in economy which is usually appreciated by the workers.

Pascall's Employ Manicurist

At a recent meeting of the Montreal Rotary Club, Mr. Alfred E. Okill gave an address on "Candy" and closed his remarks with a brief plea for special recognition of the manufacturing confectioners who produce their goods under proper sanitary and hygienic conditions. Mr. Okill kindly sent us the folowing excerpt from his talk:

"Ours is an industry of cleanliness, or should be, and it is here that I want to make my plea for the manufacturer who not only has traditions to maintain, but is not ashamed to sell his goods under his own trade-mark or name. It is not all consumers of candy who discriminate as to whose candy they give to their children. Tons of candy is made in unhygienic cellars, and I have seen it being manufactured sandwiched between a toilet on one side and a litter of pups on the other.

"As I say, Cleanliness in factories of our large manufacturers is almost a fetish. To give you some idea, in our factory in England we have a manicurist, and at any time during the day an employee, with the permission of the forelady, may have her nails manicured. On the surface this may appear rather absurd to you, but the psychology of it is this: that a new employee when she is sent to have her nails manicured gets the atmosphere of cleanliness, and is made to realize how essential it is to be 100% clean when dealing with food.

Workers and Working Environment

"The cleaning crew must be self-respecting people—not human derelicts," says Mr. Steely in his article on Schrafft's methods and policies.

The battle for cleanliness is more than half won by building an organization of men and women who are instinctively clean and do their work in a way which naturally fits in with the sanitary policies and program of the plant.

Containers

Granting that your goods are made in a clean factory with clean equipment, of clean materials by clean workers, are you reasonably sure that the consumer will get the full benefit of your precautions to produce a clean and wholesome food product?

Here is where careful consideration should be given to the selection of the package and shipping container to eliminate all possible sanitary hazards.

Six of the Eleven Plants Are Out of Business

"I have worked in eleven candy plants in my life; the first one when I was sixteen years old," said a very well-known candy manufacturer of some forty-odd summers (though he doesn't look it) in discussing our sanitation campaign recently. "Six of those factories were dirty ones and today they are all out of business."

It is utterly impossible for a wholesale plant to get the tonnage on a piece of candy that will repeat successfully without operating his factory on a regular respectably clean and sanitary basis. The other kind will hang themselves in the face of competition today.

Let the Superintendent Help on Sales
He Has Ideas

by Walter H. Belcher

Vice President and General Manager, Walter M. Lowney Co., Boston
President, National Confectioners' Association

HOW can a Superintendent or anyone elso do a good job with real interest unless he knows something of the background and the "reasons why" of the effort? I am referring now, of course, to such Superintendents or head foremen as are not principals of the firm but are in many cases trusted employees of long experience.

Take the Superintendent into your confidence, tell him your plans for the year, what you aim to accomplish and how you propose to do it. Let the Superintendent, as well as the Sales or Advertising Manager or salesmen, in on your discussion and let him help you reach your conclusions.

Expect him to be able to discuss matters of sales and advertising insofar as they affect his departments, and encourage him to loosen up on his opinions.

There are lots of men besides salesmen who can talk if they sense a feeling of friendliness and sympathy with their point of view,—and it is a poorly equipped Superintendent who cannot contribute something in a discussion of the welfare of the business.

He can give valuable assistance in the discussion of new items for the line and in deciding which numbers should be dropped. The Superintendent knows better than anybody else what the factory can make to advantage. It is as important to sell what the factory is best equipped to make as it is to drive for business on items that may be highly competitive and, therefore, show a small profit. Let your competitor get the bulk of this low-priced business, and secure for your factory the orders which show you the largest profit.

Let the Superintendent match production estimates against estimates of sales, and assist in working out a combined programme for the season. Encourage him to offer suggestions as to new items and as to methods of distribution which will deliver the candy to the consumer in the best condition. Make him realize that he is a part of the sales organization and shares in the responsibility of increasing sales. He should have a voice in deciding as to what the business as a whole can sell to the best advantage.

Certain angles of the cost of doing business are of as much interest to the Superintendent as to the "firm,"—perhaps more so because they may affect the trade reputation of the Superintendent. His own self-interest prompts him to be vitally interested in them. He can do more for you and be a better Superintendent for you and in his own estimation, if he has a little encouragement and feels sure of your confidence.

Don't spoil him with "conferences." Be sensible and get a return in intelligent effort.

Economic Prospects for 1925

by Herbert Hoover

Secretary of Commerce

A FORECAST of the business future must be simply a weighting of the economic and political forces in motion. The annual survey of the Department of Commerce shows that the new year begins with the economic structure of the world upon more solid foundations than at any time since the war. With the exception of a few spots of secondary importance there has been during the past year a real advance toward social, economic and political stability throughout the world. The only exceptions are Russia and China, which, even before the war, contributed less than 3½ per cent of international commerce and, of course, a part of this continues. Generally the world is producing more goods, there is fuller employment, there are higher standards of living, more assurance of economic stability for the future and more promise of peace than we have seen for many years. The world is by no means free from liability to economic shock, yet the forces today in motion all tend to great promise for the forthcoming year.

Recovery of Agriculture

In our own country the outstanding economic development of the year has been the very large recovery in agriculture after its two-year lag behind the recovery of industry. The farmers have a large measure of losses in the last three years yet to recover, but their outlook is encouraging. There are some secondary difficulties still remaining, particularly in the cattle industry and the effect of the sub-normal corn crop; but the prices of all farm products are gradually moving toward the general average of commodity prices. This improvement in prices of farm products has been paralleled with some decrease in the prices of many industrial commodities, such as fuel, building materials, metals, etc., so that there has been little change in the average of all price levels, and thus the farmers' purchasing power is being remedied in both directions.

Wholesale Prices

While there has been a good deal of adjustment in prices of single commodities during the year, the average wholesale price of all commodities has varied but 3 per cent as between the ends of the years 1922, 1923 and 1924. It would thus appear that we are tending to the common level in prices of about 50 per cent over pre-war, which seems to represent at least our present economic plane in prices.

Average Wage and Cost of Living

The average wage in industry has been stable during the last year, and remains around 100 per cent above pre-war, while the cost of living has maintained almost exactly the same level at the end of each of the last three years, 1922, 1923 and 1924, about 72 per cent over pre-war. Our labor, therefore, continues to enjoy the highest real wage in its history. There was some unemployment in the middle of the year, but it has now been largely overcome.

Production

While there was some slackening of manufacturing production as a whole in the spring due in part to the uncertainties of election and in part to reduction of accumulated stocks, yet there was but little slackening at any time in consumption of major articles as shown by the continued high levels of car loadings, of sales of wholesale and retail establishments and of construction activities. The end of the year finds us with a recovered industrial production at practically the same levels as a year ago. Two industries —textiles and northern soft coal— have lagged in recovery.

Construction

The construction work of the country has maintained high activity. While the shortage, particularly of housing and business buildings, due to the cessation of construction during the war, has been to a large degree overcome, yet continued high real wages and general prosperity create a demand in excess of that due only to increasing population, because of the insistance of a population of rising standards of living; for more elbow room and better housing generally.

One striking factor in maintenance of increased construction activities is the effect which the automobile is producing in increasing the demand for road construction and in causing migration of population in many of our towns to new housing in the suburbs. Another effect of these forces is to maintain rents out of line above the general price levels. With our high real wages and little unemployment there is no reason to expect any material change in the course of this industry.

Railroads

Our railroads have shown continued increase in efficiency during the year, and have now proved themselves equal to any burden which is likely to be thrown upon them. Motor transportation continues to develop and to enter more and more into the vital economic life of the country, and, in fact, almost imperceptibly our road improvement programs are taking on the complexion of new transportation systems.

Foreign Trade

Our foreign trade has shown considerable expansion during the year in exports, and some decrease in imports. The increase in export figures has been due in some degree to the higher prices of agricultural produce, though chiefly to general expansion in all exports; the decrease in imports has been due in large part to lessening activity in production lines at the middle of the year, thus reducing the requirements for imports of raw material. The total of our exports for the year will show about four billion six hundred millions and our imports about three billion six hundred millions. The merchandise balance will be about one billion dollars in our favor. The net gold imports for the year in partial liquidation of this balance amounts to about two hundred eighty millions.

Our invisible exchange will show larger balances against us than in 1923 because of the greater volume of tourist travel, increased freight charges paid foreign shipping, and above all the largely increased volume of loans and investments to foreign lands, which will probably amount to as much as one billion as against one-third of that amount for 1923.

International trade in the world as a whole shows a larger movement of commodities during the past year than at any time since before the war. But international exchange of goods, measured in quantities, is probably still 10 or 12 per cent below pre-war, although

the United States is unique among the large combatant nations in having recovered its foreign trade to a point 15 per cent to 20 per cent above pre-war on a quantity basis. One of the by-products hitherto of this lower movement of commodities has been the continued depression of shipping. With the general strengthening of the economic fabric of the world, with the gradual growth in the movement of commodities which is now taking place, together with the fact that there has been but little new ship construction during the last four years, and that the existing shipping is becoming more and more obsolete, it is fair to expect a recovery in the shipping world. The usuable surplus tonnage at the present time in the world is probably not in excess of two million tons as against four million tons a year ago.

Financial

The year has again been marked by a decrease in federal taxation and by a large discharge of federal debt, which will amount for the year to something in excess of $900,000,000.

Time and demand deposits in member banks show an increase of about two billion eight hundred millions, and bank clearings for the year were higher than in 1923. The gold reserves have not increased despite imports because of the larger circulation given to gold certificates. Savings continue at a very high rate, as indicated by the increasing savings deposits, the large absorption of bond issues, and the extraordinary expansion in insurance, thus demonstrating that there has been maintained a high state of efficiency throughout industry and commerce, with little evidence of waste, extravagance and speculation. In fact, the most far-reaching movement in our economic life today is the larger understanding of its broad problems, the better appreciation of the factors of stability, and the definite progress in the elimination of waste, through more stable employment, through better administrative methods and through the rapid march of scientific discovery. That we are able to maintain wages at 100 per cent above pre-war while the cost of living is 72 per cent, and the average wholesale price of commodities about 50 per cent above pre-war is the very definite proof of increasing efficiency in production and distribution and of the free flow of competitive action.

Foreign Situation

In the foreign situation the settlement of the conflict over German reparations through the Dawes plan, with its stabilization of German currency and the German budget and the recuperation of employment and production in Germany, is having and will have a far-reaching effect upon the whole of Europe, and it has favorable influences reaching to our shores. Great Britain shows considerable improvement in all phases of its economic life. The commercial and industrial situation in France, Italy and Belgium shows steady improvement during the year. Some progress is being attained in these countries towards reduction of expenditure and increased taxation, directed towards the better balancing of budgets and more stable currency. Poland has stabilized her currency. Jugoslavia, Finland, Serbia, Esthonia, Lithuania, Sweden and Norway show manifest stability in economic and trade conditions and steady progress over preceding years. The Netherlands, Denmark and Spain show some temporary depression during the year due to local conditions which are improving. Austria, Roumania, Bulgaria, Hungary and Turkey do not show the rate of progress of some of the others. Russia makes no real advance. A large part of Europe, however, continues dangerously overarmed and currencies are not yet upon that foundation of stability which will only be reached when they are placed upon a gold basis.

The year has been one of steadily increasing prosperity for the whole of Latin-America despite three revolutions. Our sales of export goods to this territory show an increase over the previous year of about 12 per cent. We now enjoy the highest trade with them in our history.

The conditions in Egypt, South Africa, Congo and other parts of that continent show steady improvement, with increased productivity and trade. In Asia, the situation in Japan marks the courageous upbuilding from the earthquake disaster. China is much depressed by continued civil war. Conditions in India, in the Middle East, have shown a steady economic improvement and subsiding of political and social agitation.

A Summary

It has been suggested in some press quarters at home and abroad that the result of these favorable factors may be leading our country towards a period of inflation of the character of 1919-20 with its disaster of 1921. It can be assuredly stated that we are on the march of wholesome recovery from the war and there is no present indication of inflation. We only secure inflation when undue expansion of credit finds its outlet in bidding up prices after the plant and labor capacity of the country is employed to the maximum. We have reached no such stage because there is still a margin of labor capacity for enlarged output in the form, however, of more full time employment than from people out of work. As a nation our business men, bankers and public officials have gained enormously during the past four years in understanding of the basic factors which create healthy prosperity as distinguished from overexpansion as well as in understanding of their responsibilities in the matter. Our informational services are now upon such a basis as quickly detect dangerous currents. It might be added that a holiday season when anyone might think about safeguards from overexpansion is infinitely more comfortable than one fraught with negative problems of repair of economic depression.

Altogether forces in motion both at home and abroad mark solid progress toward peace and toward prosperity for the coming year.

How We Do It at Loft's, New York

by George F. Loft

President, Loft's, Inc., New York City

FOR a number of years back, people throughout the country, mothers and fathers of families, physicians, boards of health, etc., have been working for, and demanding clean foods, pure foods and clean methods of preparation and handling of products which were to pass through human mouths to human stomachs. The prime purpose has been to prevent the spread of communicable diseases by means of eatables and to give the public, foods which carry no hidden and undiscoverable dangers. The second purpose was to give to the consumers, definite and positive assurance that methods were employed in preparation of their foods, which would not detract in any way from its daintiness nor render it less appetizing in their minds; to guarantee, in fact, that their food products were handled in as careful a manner as they would employ in their own kitchens.

The first of these purposes can to a large extent be accomplished through sanitary codes and health department regulations, but these means are limited when the second purpose is to be considered.

Many years ago when my plant consisted of only so much floor space as I could readily oversee personally and constantly, I realized that eventually the public would base its purchase judgment very largely upon assurances of wholesomeness and daintiness. I succeeded in building a foundation, a spirit, an esprit de corp, if you wish, throughout my plant of industrial, physical and personal cleanliness which has spelled to me the backbone of success.

New York Factory, Loft's, Inc.

This spirit runs through the entire Loft organization today. My staff of executives and I, myself, are constantly on the watch to see that nothing leaves our plants which we would not gladly see our children eat, that nothing is done in our plants, which we would not have done in our own kitchen, that nothing is used, which is not in every sense and in every way, wholesome food. Our factories are under constant inspection. Our cleaning service is one of the most rigidly supervised in our organization and our inspection includes the personal examination daily by the highest officers of our organization, of candies produced the day previous.

There is scarcely a week goes by but our plant is visited by a delegation or group of women from various educational institutions. They are without exception outspoken in their praise of our methods and express themselves as being surprised at the length to which we go to assure hygiene conditions.

All of our employes are examined by a physician twice yearly. Every employe is dressed in a clean, white uniform, which covers completely all other clothing, a cap of the same color covers and confines the hair.

A corps of women are constantly in the factory watching and examining the personal cleanliness of our employes to be certain wherever a hand comes in contact with food, that that hand is a clean one, that wherever a utensil is to be used for candy, that utensil is clean. These women are all of high character and are imbued with the Loft idea of purity and cleanliness and no one is permitted to work in our factories whose methods, habits, workmanship or person are questionable.

We have in our main administration building a completely equipped chemical laboratory, designed especially for the examination of foods. Our laboratory is without a peer for this special work and through its exacting inspection all materials must pass with flying colors before they are pronounced fit to carry to the candy lover the jealously guarded name of Loft.

I am in sympathy with the extensive campaign which you are about to enter upon, having been engaged in and devoted to a campaign of the same kind for the past thirty years. Let me say that such a movement. that such an urge, does not win success through codes and rules impressed from the outside, but rather, and only, from an all pervading ambition and a high

(*Continued on page* 41)

View of the Woman's Dining Room at Schrafft's, Showing Dancing Floor in Center.

How and Why We Keep Our Factory Clean

by Dale G. Steely

General Superintendent, W. F. Schrafft & Sons Corp.

Does It Pay?

PRESUMABLY the one who selected the above title had his reasons for its arrangement, but I prefer to reverse the order and consider the "why" before the "how," for, although there is a very marked tendency toward sanitation in industry there still seems to be a question in the minds of some, as to whether or not they can afford adequate means to keep their factories clean from cellar to garret, particularly in such a business as ours where the manufactured stock and even the raw materials are so easily ruined by air surcharged with steam while cleaning.

To such I would say that not only can they afford cleanliness, but that they cannot afford not to keep clean.

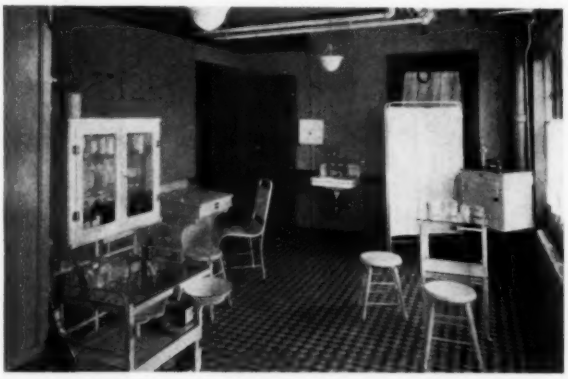
Speaking broadly and generally, the idea of cleanliness is a growth as regards either individuals or nations. It has not been so many years since in one of our greatest and oldest states bathing in winter was prohibited, except upon the advice of a physician. Many of us probably have known individuals, mostly among children, with whom washing was a mere formality. They went through the motions, but the "high and low water marks" were instant evidence of their several ideas of cleanliness.

We have known factories that gave similar testimony. Front entrances and offices were religiously taken care of, but the employes' entrance and stairways looked like the wrath to come and the work rooms revealed the state of the progress of their pilgrimage along the road to sanitation. Such places are fewer than in the past. Now and then they are still to be seen, but never among those who represent quality and progress.

Dirt, disorder and waste are three slovenly sisters and are as inseparable as those other sisters: Order, cleanliness and thrift. The mental attitude and consequent efficiency of the working force is vitally affected by either of these two trinities. If there were no other, this is reason enough why we should keep our factories clean.

The way to keep a factory clean, of course, is not to let it get dirty. Any factory can be kept clean, if the cleaning force be great enough, but since rigid economy and efficiency must be considered in the sanitary, as well as in the productive departments, the factory arrangement should in every possible way be such as will expedite the cleaning. It is not enough to say to the foreman in each department: "You have plenty of hot water, brooms, mops and scrubbing brushes; now I want your department kept clean."

A mental picture of a candy factory at work will, of course, prominently show a crew of busy workers manipulating the various materials in comprehensive bulk, as they pass through the consecutive stages of manufacture, until they arrive in definite form in packages in the stock room. But if everything that takes place is



One corner of First Aid Room at Schrafft's

shown we will also see in certain places along the line of activity an almost equal bulk of empty containers, such as barrels, cases, crates, fruit cans, paper, twine and other rubbish, also a variety of empty trays, tote boxes and the like used in interdepartmental work, not to mention the natural waste, such as fruit stones, nut shells and hulls. All of these will more or less travel the entire route of manufacture, according to the character of the product and the arrangement of the plant and the system of handling raw materials, but good, bad, or indifferent, they are somewhere in the picture. They cannot be disposed of entirely, but they can be kept moving in definite prearranged order, arriving at their proper destination in due time, with the least possible resistance.

A vital element of a candy factory is its internal transportation department. Too often the work of handling raw materials is left to just anybody to do. It is a function for a real department to operate between the raw stock rooms and all departments and be responsible for the proper delivery of raw materials to and goods in process between departments. The more this work is done by conveyors, the less there will be to do with trucks and elevators.

If I seem unnecessarily to emphasize the importance of a definite plan for waste control, I would explain that my observations in many factories and my intimate knowledge of a few lead me to believe that many who lay out and operate factories visualize only raw material going in and finished stock going out, whereas, with the exception of such things as sugar and peanuts in bags, all containers—those bringing raw materials into the plant and those circulating between departments—require as much space empty as when filled. Failure to realize this and plan accordingly is, it seems to me, the cause of much confusion and consequent untidyness.

Boiled down, it comes to this: "A place for everything and someone to keep it there." And another thing, frequent surveys of this department and its machinery are necessary. Its equipment consists of trucks, conveyors, elevators, tote boxes, trays, waste barrels for paper, and distinctly separate barrels for ashes if there be any, still other ones for debris, such as hulls, shells, fruit stones and the like, also very definite places for these things. Each barrel, preferably fibre for some purposes and metal for others, should have the name of the department it is intended for and its use printed upon it. If sugar barrels are used they should be reinforced and painted. All damaged equipment should be sent immediately to the mechanical or salvage department for repair, as nothing looks worse than rickety equipment in use and no one has any respect for it.

The necessary equipment of the sanitary department of two factories of similar size and output, one located in the outlying sections and the other in the congested part of a city, might and probably would be greatly different. Some modern plants where location permits employing incinerators, where almost everything is consumed, empty fruit cans along with the rest; everything except paper, which is baled, candy pail hoops and bale wire. In such cases the number of waste barrels needed is not so great, as there is no wait for the teams or trucks to come around in bad weather.

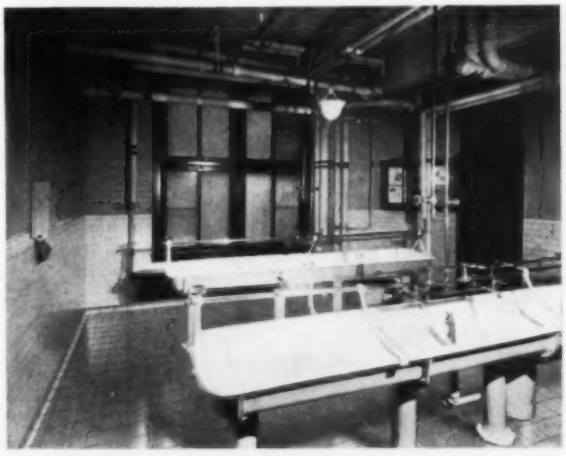
In getting down to answering the sub-titles categorically, generalization again seems to be necessary.

The Cleaning Crew

To say simply that our plant requires a crew of sixty men and women with two supervisors to keep our factory clean would mean much or little according to whether or not the reader was familiar with the plant. Questions such as "How big is the place? What floor space? What is the character of the floors and walls? How much space is devoted to candy making and how much to packing and storage? How clean is it? How efficient is the crew?" naturally arise. Nor can the size of the cleaning crew be calculated on the percentage plan, i. e., for every 100 employes so many cleaners.

Sell the Idea of Cleanliness to Workers

As stated above, the way to keep a factory clean is not to allow it to get dirty. The place



Wash Rooms at Schrafft's

The Noon Hour at Schrafft's

to begin is with the factory workers themselves. They must be sold on the idea of cleanliness and kept sold, for the most efficient crew of cleaners imaginable can make but little impression if the workers do not take an interest in having their work rooms clean. Selling sanitation is not a difficult matter if it is made the business of someone to do it. Employes of all classes respond to the idea quickly.

Good light, good floors, order and uniformity of equipment are potent forces. But a ready means for the quick disposal of litter is necessary. These things and adequate means for the workers to care for their personal cleanliness will enable the cleaning crew to get results, where a much larger force would fail without them.

Our offices are cleaned by a crew of women that come at 6 o'clock in the morning. This work is finished a 8 o'clock. By this time the factory employes are at work, leaving the locker rooms and halls and stairways vacant, so they can be cleaned by the same crew.

Dining rooms for girls and men are both equipped with enameled-top tables, seating four people each. The chairs have specially designed removable receptacles underneath for paper lunch wrappings and fruit peelings. A rubber-tired box truck is wheeled between the aisle at cleaning time, so that contents of receptacles can be easily dumped into the box without spilling. (See illustrations herewith.)

After lunch the dining room and equipment is cleaned, its chairs are placed in order, and after a rest period for this crew the stairways are washed again, and at 3 o'clock the early morning crew goes home. They are in charge of a well trained, experienced woman who also makes and sees to the serving of the coffee and cocoa for the employes at lunch period. Most of the rest of the cleaners are men who work about the same number of hours as the men in other departments, only they work Saturday afternoons and when necessary they work later evenings. These men are in charge of an experienced janitor who directs their efforts as required throughout the plant. All cleaning work requiring ladders, window washing, cleaning of elevator shafts or any other climbing is done by them. They look after roof and floor drains and keep them clean, also the men's wash and toilet rooms.

How We Clean Machinery and Equipment

Machinery and equipment is cleaned by the users. Naturally the process of boiling is finished before quitting time. This makes it possible to keep copper bright and clean at all times. Depositors are cleaned every day at closing time with high pressure steam and water. The foreman of the starch department holds each operator responsible for his machine. It is well to note here that one of the things an operator is rated on is the condition in which he keeps his machine. In order to facilitate cleanliness in a starch room it is well to have a curbing around all depositors.

The nature of the work in a hard candy department is such that comparatively little cleaning is necessary if the men are well trained. It ought to be one of the tidiest looking places in the factory.

Little can be said about chocolate machinery. It ought and can be kept scrupulously clean at all times. Whether there is one machine or fifty to care for the story is the same: "Keep at it all the time." Proper installation plays such an important part that there is all the difference in the world between what is necessary in one plant and in another.

What Cleaning Materials to Use

Mostly steam, hot water and elbow grease, soap and cleansing powders in some places. The floors in such places as packing rooms where hot water and steam cannot be used daily must be swept several times a day. This is usually best done by having a sufficient number of people sweeping all day long. In these departments the training of the workers is most important. If the equipment is properly laid out, if the manufactured stock and necessary supplies are systematically cared for in bins and cabinets and is distributed as required, there will be no great litter on the floors. This requirement is so obvious that it seems almost unnecessary to mention it.

Uniforms for Factory Workers

Uniforms are furnished and laundered for employes, because it is the easiest way to insure cleanliness and because uniformity in appearance has, in our opinion, an important effect for good on the minds of us all.

Care of Raw Materials

All raw materials are surrounded with every safeguard possible. Every container is standard in specification and, except those in actual use by workers, is covered.

Are Factory Windows Screened in Summer?

This question is best answered by the statement that if screens are needed they should be supplied. We have no screens on our factory windows. We do not need them, but it may be partly due to a local condition and to the fact

that all open windows are in departments above the fly line. The lower floors have tight windows, as the rooms are supplied with fresh washed air through ducts arranged for that purpose.

Lockers, Shower Baths, Wash Rooms, Toilets, Etc.

Each employe has a metal locker for his personal use. There are no instructions except that no food, outer garments or other personal belongings are allowed in the work rooms. This makes it easier to keep departments in order and assists in the extermination of vermin. Showers are provided for men in certain departments where the work is hot and dusty. Wash room and toilets are all of one standard design, with tile floor and walls, the most sanitary wash bowls, urinals and commodes. Wash rooms are glass enclosed so that everything in the room is visible from the work room. The toilets are beyond and connected with them. Large, light, well ventilated wash rooms, with ample washing facilities so there is no need for waiting at rush periods, are of incalculable value in obtaining and keeping the high type of workers that are so desirable. It also helps and encourages the idea of sanitation in new workers. In smaller departments one matron may look after two or three wash rooms.

Inspection

The entire plant is inspected for details of cleanliness every Saturday afternoon, when the plant is shut down. The sanitary department inspects all lockers at specified intervals.

The entire sanitary program is under the direct supervision of the medical staff which consists of three full-time nurses working under the supervision of two part-time practicing physicians.

To sum up the problem of sanitation is always with us. It presents itself as soon as we get up in the morning and stays at our elbows throughout the day, in our homes, in our streets, in our work shops and will probably cling to us like a vexatious burr until Gabriel blows his horn. It behooves us, therefore, to consider it well. Factory lay-outs should be made accordingly. Floors should be made of materials that will stand the particular use and abuse to which they are subjected. If tile walls are too expensive, galvanized iron well-laid four to six feet high, as circumstances require, facilitates cleaning and will last and look well for years. Equipment, especially kettles, should never be placed so close to walls or so close together that it cannot be easily cleaned on all sides.

Dining Room. Note style of tables and chairs

Rats, mice and other vermin are apt to be a cause of much damage to raw materials and manufactured stock and cause great annoyance unless the matter of their extermination is given intelligent attention. All outside openings to buildings, such as ventilators, especially those close to the ground, should be well screened with galvanized wire mesh. All holes for steam and water pipes through partitions should be no larger than is necessary, as these make convenient highways for rats and make it harder to get rid of them. Raw materials and finished stocks in warehouses and stock rooms should be arranged so that they are accessible from all sides. Furthermore, experts in rat and vermin extermination should be employed by the year to keep the plant rid of pests.

We have employed for years a retired city fireman who makes daily rounds in search of danger spots, such as littered corners. The safety committee also helps in this work.

Employ Cleaning Crew with "Sanitary Conscience"

In some plants cleaning crews are gathered from the flotsam and jetsam thrown up by the industrial tide, because it is hard to find men and women who are content to make a real business of keeping things clean. Sanitation is not promoted in this way. Clean factories are kept so not by human derelicts, but by self-respecting men and women. If they have tact, so much the better. Tact is indispensable in heads of such departments in order to get the co-operation of all employes. Such individuals are few and far between, but they can be found.

We have at least two such department heads. In speaking of one of them, one of the superintendents remarked: "That woman seems to think that this factory was designed, built and is kept running just so she can keep it clean."

Stabilizing Production in the Manufacture of Package Goods

by Deane M. Freeman

General Superintendent, F. H. Roberts Co., Boston

ASSUMING that everything possible is done in the way of sales effort to stimulate business during the dull seasons in the average high grade package plant there will still exist two marked peak points, namely, Easter and Christmas.

It is a common practice to have the production follow rather closely this violent fluctuation in sales and where this is done there always exists the evils of unfilled orders, and too much equipment. Further, during the peak points of production so much green labor is brought into the plant that labor costs are bound to go up, due to the fact that it is not possible to train large numbers of employes in a short period of time.

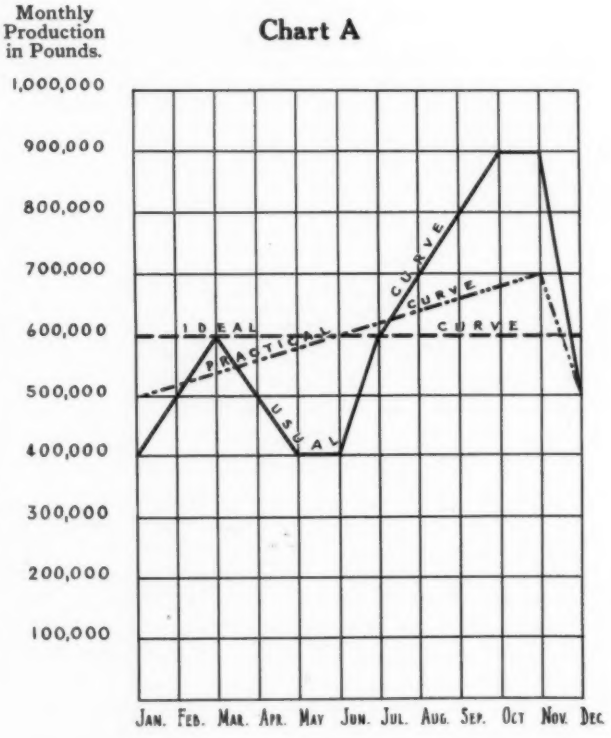
Before going into the method of stabilizing production, let it be understood that this plan presupposes an accurate perpetual inventory with carefully established maximum and minmum stocks set on all items; a sufficiently intelligent finished-stock crew to see to it that the oldest stock is shipped out first; and a planning department skillful enough to maintain a flexible manufacturing schedule without loss of efficiency.

For the sake of briefness and clarity suppose that it is necessary for a plant to manufacture 7,200,000 pounds annually. Referring to Chart A, the Usual Production Curve shows pretty accurately the fluctuation in production in the average plant manufacturing this amount of goods. Where the candy is marketed through jobbers instead of direct to the retailer the peak points will come from a month to six weeks earlier but the variance in production will be just as great.

Of course the Ideal Production Curve is a straight line which divides the year into twelve equal parts, as in this case of 600,000 pounds per month. This, naturally, is not practical because of the amount of finished stock which would accumulate with its attendant excessive demands on storage and financing, together with the possibility of spoilage due to age.

There is, however, a happy medium between the Usual Production Curve and the Ideal Production Curve, and this is the Practical Production Curve. This practical curve can come just as near the ideal curve as the storage, financing, and length of time the goods may be kept fresh, will permit.

Chart A



Knowing the storage capacity of a plant in pounds it is necessary only to so plan the Practical Curve that the accumulative production minus the current sales will not be greater at any time than this storage capacity.

For example, take a storage capacity of 1,000,000 pounds with the anticipated sales as shown on Table B. Starting with the January inventory, which should be *as low as possible*, adding to this the proposed January production and deducting the anticipated January sales, the amount of goods on hand February first will be 300,000 pounds. Continuing this method it is possible to check out in advance for the entire year to see if it is possible to set up such a slowly increasing (Practical) production curve as illustrated on Chart A. If it develops that the inventories in the early fall are going to be too great for the storage capacity, it will be necessary to begin with a smaller production in January, and increase it more rapidly. Further, if as the year progresses it is found that the actual sales do not approximately coincide with the anticipated monthly sales, either by being greater or less than expected, reconcile this dif-

ference by increasing or decreasing the production schedule accordingly.

On the face of it, the Practical Curve may not look workable but a little study will show that in almost any plant it is possible to schedule the production on what seems at first glance a very small increasing increment.

If then, it is proven to be practical to manufacture on a constant, and slightly increasing scale the following advantages will result:

1. From 25 per cent to 30 per cent less equipment and floor space will be required, as represented by the percentage of difference between the Usual and Practical peak points; or conversely, it will be possible to increase the output from 25 per cent to 30 per cent without additional machinery or buildings.
2. Labor turnover will be reduced because 70 per cent of the employes will be constantly on your payroll, and consequently less apt to seek more permanent positions in other industries.
3. Labor efficiency can be increased because so slight an addition as 4 per cent monthly of green employes can be properly trained without disturbing your organization.
4. Improvements in methods of production can be perfected due to the gradual increase in volume of manufacture.
5. Orders can be filled promptly and completely.

These five major advantages have a very real and sizable dollars and cents value which offset many times the slight trouble and expense which such a method of equalizing production requires.

A. H. Potter Heads Potter Confectionery Co.

The Potter Confectionery Company has severed connections with all other companies and is again owned by Mr. A. H. Potter. They expect to move into their new quarters with offices at 810 Main Street, Cambridge, on February 1st.

Retail Manufacturers Convene in Boston

The annual convention of the Associated Retail Association will be held in Boston, June 1, 2 and 3, 1925. This is the same week the National Confectioners' Association will be held in Boston. The February issue will give full particulars.

Laura Secord Candy Shops Divide Profits

The Laura Secord Candy Shops, Toronto, Canada, have for a second year in succession divided their profits with their employes who have been with the company for upwards of six months. It represented a substantial percentage of the total salary earned by each employe during the past year, making each one a co-partner in the organization.

Chart B

	INVENTORY IN POUNDS	+ PRODUCTION IN POUNDS	− ANTICIPATED SALES IN POUNDS	= INVENTORY IN POUNDS
JAN.	200,000	500,000	400,000	300,000
FEB.	300,000	520,000	470,000	350,000
MAR.	350,000	540,000	590,000	300,000
APR.	300,000	560,000	500,000	360,000
MAY	360,000	580,000	500,000	440,000
JUN.	440,000	600,000	500,000	540,000
JUL.	540,000	620,000	400,000	760,000
AUG.	760,000	640,000	400,000	1,000,000
SEP.	1,000,000	660,000	660,000	1,000,000
OCT.	1,000,000	680,000	1,000,000	680,000
NOV.	680,000	700,000	1,200,000	180,000
DEC.	180,000	600,000	580,000	200,000

The Policies and Standards of Sanitation and Plant Cleanliness at Strietmann's

by Edward H. Strubbe

Production Manager, The Strietmann Biscuit Co., Cincinnati, Ohio

MY PURPOSE is to give you some idea as to how a modern biscuit and cracker factory is kept clean, orderly and sanitary; and why we keep our factory as we do. The president of our company has always realized that in order to serve the public with a pure, wholesome product, the plant, equipment, raw materials, personnel and processes must be absolutely clean, sanitary and orderly. It is this ethical practice demanded of the executives and workers, and the realization that through this practice the workers' spirit and morale, the plant maintenance costs, the manufacturing efficiencies, and the improved products are all helped that a cleaning system and a cleaning department has been developed about which I am going to tell you.

Interesting the Workers

The first step in establishing a clean and orderly plant is to obtain the co-operation of the foreman and the worker or in other words to sell them the necessity and advantages of plant cleanliness. This has been accomplished in the following manner:

(a) Appealing to the pride of the individuals by exhibiting their equipment, manufacturing processes, and personal selves, during factory visitations of Mothers' Clubs, Civic Organizations, schools, parents and friends of workers, and any other group or individuals desiring an opportunity to see the practices and methods used in biscuit manufacturing.

(b) Organizing a cleaning system and standards among the workers.

(c) Having an Inspection Committee, making periodical inspections of the entire plant.

(d) Assisting the workers to remain clean and healthy by giving them well lighted and well kept locker rooms, shower baths, toilets, wash rooms, rest rooms, first aid and medical room, cafeteria, etc.

(e) A cleaning department, helping to make the factory a more delightful place for the workers, as well as a more sanitary place, so as to insure our guarantee of strict purity.

Factory Visitations

Thursday of each week is generally visitors' day. The sales department has sent out invitations to some organization and they are to be our guests this coming Thursday. The notice comes through to the production manager and is posted on the bulletin boards. The foremen in charge of the cleaning system in their departments and the general cleaning department begin to plan their work so as to have everything spick and span for the visitors. Thursday, the visitors arrive at 2 p. m. approximately fifty in number. They are divided into groups and assigned to guides. It is very noticeable, while doing this guiding, to observe the pride and interest of the workers. The employes hear the comments of the visitors and I think one of the most impressive things to any outsider is the cleanliness and order of the factory, equipment, and the spirit and neatness of the workers. I am convinced that there is no better way of creating good-will among our customers, consumer satisfaction and confidence and also a loyal interest among the workers than through these visitations.

Sometimes we are not notified of a visitation and very often one, two or three small groups come through the factory in a single day and so to be prepared at all times we have established a standard for cleanliness and order. To retain the standard we have developed a cleaning system.

The Cleaning System

To better present the standards of this system let me illustrate by telling you about our icing department where the equipment, materials and processes are very similar to those of the candy manufacturer.

Our machines are all operated by crews numbering from four to eight workers, each worker having a definite part of the machine to keep clean and orderly. For example, it is the duty of one to clean the dies, another scrapes and scrubs the canvas aprons, another sweeps the floor around the machine, another cleans the working parts, such as the plungers, hoppers, etc. *No machine or equipment is permitted to remain dirty over night.*

To do this cleaning we allow fifteen minutes, shutting down machines at 4:30 p. m., while the closing time is 4:45 p. m. It is not a difficult task to see that this is all carried out for the workers know that they cannot leave until the machines and floor space about are properly cleaned, hence, they do this work unhesitatingly. It was during the operating hours that we experienced our trouble, for through carelessness scrap accumulated about the machines, arrangement of equipment became disorderly, and in general the materials handled tended to create a mess.

To cope with the above difficulty, we have adopted a place for everything and it is up to the executive and foreman to see that everything is kept in its place. We have designated places for all materials, equipment, brooms, mops, auxiliary equipment, etc. We have gone to considerable expense in building cupboards, raw materials bins, special guards and scrap retainers, canvas covers for machines, cleaning materials, etc., so that there may be no excuse for uncleanliness, unsightliness, exposed equipment not in use or disorder of any kind. To go into all the details of the things we have done in this connection would make this article very long and tiresome, so I will give you a summary of the four outstanding features adopted to keep the icing department clean and orderly at all times.

(1) Organizing the cleaning; assigning definite cleaning work to each individual.

(2) Demanding order during the operating hours, keeping things in the places designated for them.

(3) Keeping machines covered when not in use. Not permitting machines or equipment to remain dirty over night. (The enrober is the only equipment exempted, however, the feed pans and the entire outside must be cleaned very day with hot water.)

(4) Demanding that the workers themselves keep clean, by wearing washable outer garments and requiring a complete change of uniforms twice a week. (I might say that all of the working apparel used in our factory is of the same style and material. The men wear white uniforms, with the Strietmann name embroidered over the pocket of the shirt. The girls have blue and white checked aprons, with sanitary caps, the Strietmann name on the front of the head dress. This uniform adds greatly to the cleanliness and pleasing appearance of the factory personnel.)

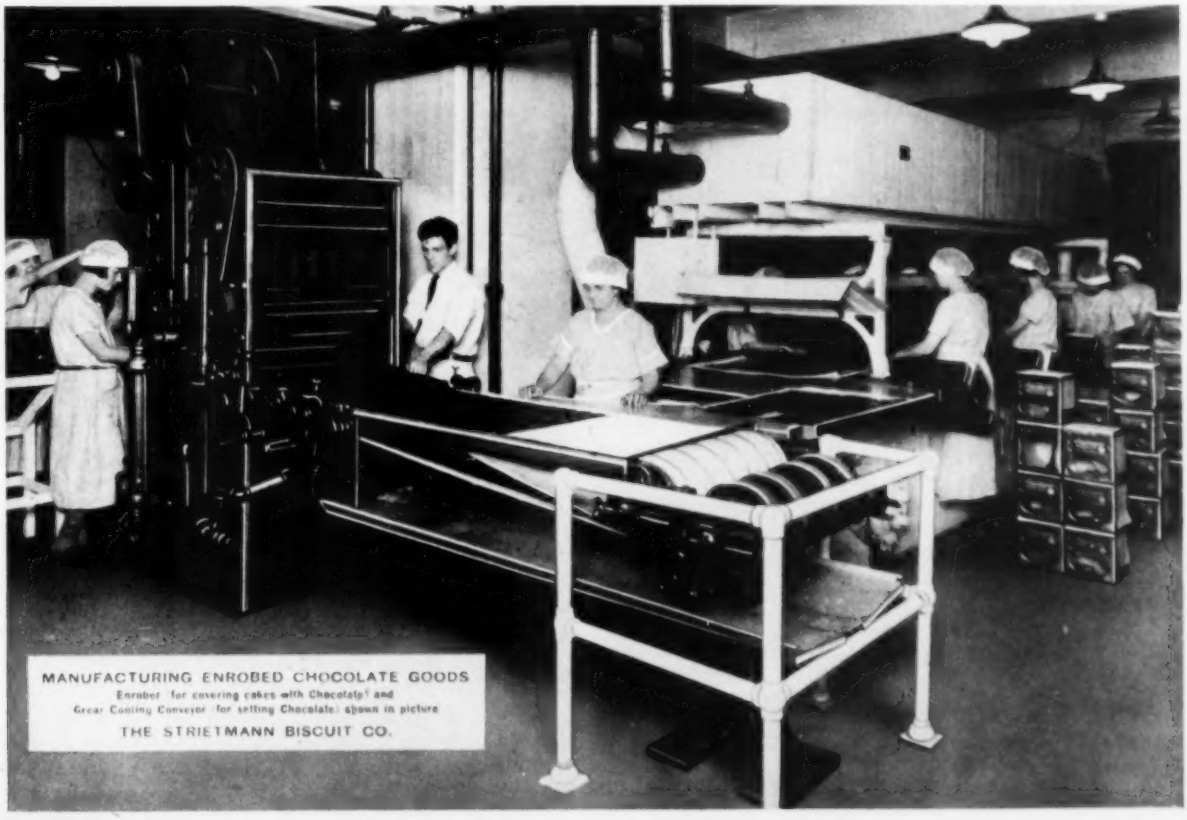
Inspection Committee

Like any problem this one of keeping a factory clean and orderly requires continued checking and supervising in order to make it a success. Exposed or open places about the factory can be easily observed and checked up by the foreman and other executives, but it is the hidden places, those that cannot be seen from the beaten paths that require a continual and systematic checking. Therefore, an inspection committee, composed of two plant managers and one office executive, was created.

Checking Up

The committee makes periodical inspections of the entire factory. The time or day of inspection is entirely up to the members of the committee, and so most of the inspections are made as a surprise, when least expected.

The duties of the committee are to look into the places the every day eye does not see, to inspect cupboards, toilets, raw materials bins, store and stock rooms, idle equipment, locker



MANUFACTURING ENROBED CHOCOLATE GOODS
Enrober for covering cakes with Chocolate and
Great Cooling Conveyor for setting Chocolate shown in picture
THE STRIETMANN BISCUIT CO.

rooms and wash rooms. One of the committee acts as a secretary and records all findings not up to the standard. The department foremen are then brought together and with the president as chairman of the meeting the report of the committee is discussed. Proper steps are then taken by the respective foremen to see that the unfavorable conditions are remedied. This inspection serves as a splendid check and keeps everyone keyed up.

Up to this point I have told you what we demand of the workers and how we keep the workers interested in cleanliness. Now, I want to tell you something of the things we do for them to justify our demands.

Working Conditions

First, we give the employes every possible means of keeping healthy, efficient and satisfied. We provide a spacious cafeteria, a library, large, well lighted locker rooms, sanitary sidecowel drinking fountains, shower baths, wash rooms, rest rooms, medical and first aid room, etc.

Second, a cleaning department with a personnel of thirteen people, including four women, eight porters and one foreman, which does nothing else but keep the factory clean and sanitary, thus making the environment more enjoyable for the workers, all of which stimulates a healthy pride and respect for our plant and product.

Cleaning Department

The cleaning department is divided into two groups:

(a) Porters for the non-productive departments.

(b) Porters for the productive departments.

The first group is composed of four women and is generally assisted by the foreman or a porter from group (b). This group operates on a schedule similar to the following:

Begin work at 5:30 a. m. General and other offices are given a thorough renovating each day. Floors are mopped, windows cleaned, desks and other furniture polished, lights are cleaned, and many other duties are looked after, before 8 a. m., at which time the office force arrives and cleaning work in the offices is suspended. This group is then divided, each going to their respective non-producing department, such as stock and store rooms, dressing rooms, container preparation department, etc. These departments and units are given a thorough cleaning each day. The leaving time of this group is at 3 p. m.

The second group, or group (b), are all men porters, divided as follows:

Sugar wafer department, one porter.

Baking department, two porters.

Baking-packing department, one porter.

Icing department, one porter.

In this group there is also a porter classified as a window cleaner, not assigned to any special department; and a general porter who runs errands, cleans sidewalks, etc.

This group operates on a schedule as follows: Starting time, 8:45 a. m. Clean drinking fountains, sweep and dust stair wells, scrub stair wells, clean and scrub toilets, replace paper towels and toilet paper, clean foreman's offices, dust pipes, clean lights, clean radiators, etc., sweep floors.

Lunch period, 12:00 to 12:45. Stairs are again swept, but not scrubbed, waste paper and floor sweepings are emptied from receptacles and delivered to elevators, floors are swept and the mopping begins when the machines complete the day's work.

The leaving time for this group is 5:50 p. m.

The above are the daily duties, the following are some of the special and periodical duties:

Shining and polishing all brass surfaces. This is done each Friday.

Washing window sills, weekly.

Washing down walls and using scrubbing machines on the floors, whenever the foreman of the cleaning department authorizes this practice. This is done on an average of six times a year.

Every window is cleaned at least once every ten days.

There are many other duties done by this group, which the foreman, while making his rounds, has observed as needing attention.

In having a cleaning department of this kind the cleaning duties of the porters and those of the factory workers must be clearly defined so as not to have one depend too much upon the other.

In addition to our cleaning department we employ a painter. He uses plenty of white paint on our walls, ceilings, equipment, machines and raw materials bins. When I tell you that he is busy at this work the entire year you can appreciate to what an extent we strive to "clean up and paint up."

In conclusion let us see just why this company considers cleanliness and order so vital a problem and why we are so persistent in our demands for sanitation. The house-wife, our big buyer, is not all together sold on the idea that products baked in commercial ways are as pure and wholesome as products made by herself in the home kitchen. It is this thought, ever in our minds, to convince her that Strietmann products are as clean and pure as those of her own kitchen that has prompted us to keep our factory as we do, and to open it up to the public, so as to demonstrate that we are giving her a clean, wholesome product, made in a sanitary bakery by a healthy group of workers. On that basis we can build a substantial sales contact and feel that our market is stabilized. We know full well that any deviation from our high and exacting standards of purity, cleanliness and sanitation would jeopardize our sales and naturally we do not care to flirt with failure by compromising these fundamental ideals which the consuming public expects of every food manufacturer.

From Page & Shaw, Inc.

A Brief Statement of Policies and Methods of Maintaining a High Standard of Plant Cleanliness and Sanitation

by David Black

Treasurer, Page & Shaw, Inc., Cambridge, Mass.

IN EVERY industry there are generally two or three important problems which keep the manufacturer constantly on the "qui-vive." In the manufacture of high-grade candy, cleanliness is perhaps one of the hardest problems to solve. It is not sufficient merely to sweep the floor, to dust tables and keep things apparently picked up; this is merely removing the surface dust and the accumulation of debris. In making any article which is to be eaten there must be most minute care used that no particles of any impure matter shall be existent in the atmosphere, or that can be absorbed in the cooking or during the packing.

When an article has attained a world-wide reputation it is even more difficult to maintain that reputation than it was to acquire it. This is especially so in high-grade candy which is sold to patrons who, as a class, ar most critical and have a right to be so, because of their ability as connoisseurs of the best things in life.

Impress "Cleanliness" on the Subconscious Mind

In order to embed the thought of cleanliness into the consciousness of our employes, we find it is essential that they themselves must aspire to be clean and tidy in their dress and habits. We supply fresh white suits for the men, and caps and aprons for the women, and also provide for these being laundered and handed out at regular intervals. There is no excuse for any employe appearing in soiled clothing.

We also post notices in every room where the hands of employes actually touch the candy that they must wash their hands every time they pick up or touch any article that may be soiled. In our dressing rooms we also have these notices and these rooms are disinfected, washed and scrubbed every night. It is impossible to expect cleanliness in the daily factory routine if you do not have the thought of being clean and tidy impressed upon the minds of the employes.

How We Keep the Plant Clean

Our production costs analysis show that a fraction better than 10 per cent of the time in each room is used to keep the room scrubbed and picked up. In each room there is a helper whose personal duty is to clean and pick up. Floor scraping and washing is done during the night by a staff of five men. The usual methods of scrubbing with hot water and soap preparations are thoroughly completed every night.

In the making of our candy, our apprentices are instructed, as part of their training, to keep the area around their kettles particularly free from anything that will soil or accumulate matter that would become unsanitary.

If a kettle boils over, a helper, whose duty it is to keep the floor clean, is immediately called into service, and the floor washed clean at the time.

The disposition of refuse is quite a problem and for this we found it advisable to build our own incinerator.

We employ two men whose duty it is to spend their day removing the refuse from the rooms to the incinerator to have it burned. To sum up; our cleaning department consists of a crew of porters and one or more individuals in each room whose particular function is keeping both the room and the utensils in it scrupulously clean.

We use the best cleaning materials that we can find on the market. Our factory windows are screened, and in the dressing rooms we keep a matron whose duty is to attend to house regulations. On each floor we have a superintendent who includes in his duties the daily inspection of the physical condition of the plant.

Our plant is open to visitors at all times during the year and we have a great number of colleges and universities who send their various classes in economics to our factory for instruction. The average number of visitors to our factory is probably 5,000 persons per year.

In regard to the care of raw materials; these are never allowed to be exposed needlessly. They are kept in our own refrigerated storage room and are delivered in covered containers at the time when they are to be used.

In our opinion, cleanliness is one of the essentials in the making of candy. No matter how high-grade a raw material may be nor how high-grade your candy makers may be, nor how well appearing your finished package may be, if cleanliness is not observed from start to finish, the production somewhere will reflect it. And, in due time, the customer will recognize that something is wrong.

How Factory Cleanliness Pays a Profit

by H. J. Fromhold

Superintendent, The Nuss Confectionery Co.

EVERY industry is responsible for the conditions that exist in its factories. The number and character of the laws placed upon the statute books to better conditions in the factory do not add to the integrity of the concern which pledges cleanliness but the laws and regulations actually enforced by the company are what determines the sanitary standard of the plant and its manufactured products.

How Cleanliness Pays Profits

One of the most important factors in the confectionery industry is the sanitation of its manufacturing establishments. The general public is vitally interested, in fact so interested that no wide-awake, far-seeing manufacturer can close his eyes to the advantages gained from proper sanitation. A clean factory has advertising advantages; it also adds to the efficiency of its employes, the result of which means increased production. A clean factory pays in dollars and cents—in which we are most interested whether we admit it or not. If we analyze our reasons for doing this or that in business and if we are honest with ourselves, we must admit that our main object is profit and not some idealistic motive.

When I was asked why I keep my factory clean, I did not give a lot of stereotyped phrases such as, "It's a debt we owe the public," etc., but answered frankly, "Because it pays." Don't misunderstand—I admit we have an obligation to the consumer, but the paramount reason for any one to be in the candy business is to MAKE MONEY and not to pay debts to the public. Primarily a good business man does not keep his factory clean because it's a debt he owes to the public, but because it is good business and if anything a clean factory releases him of any further debt to the public.

I have heard such remarks as these: "You do so many things that are unnecessary such as scrubbing the floors each day, boiling your utensils between each batch, insisting upon absolute cleanliness among all your employes, painting your entire plant annually, etc. Why you could 'get by' without all that foolishness."

We are not trying to "get by" with things. Frequent painting increases the light; the gain is more efficiency and increased production. Dirty floors and machinery means dirty candy and also equipment prematurely worn out. We only employ clean, healthy people because we cannot afford to have sickly people handle our candy. People in poor health cannot work as efficiently as healthy ones and if one man in a working unit is ill, the work of that whole unit is held up because a substitute is never as efficient.

We demand absolute cleanliness of every employe, therefore we must do our part to help him. Each floor is amply supplied with lockers, toilets, shower and washing facilities. Porters clean these bi-weekly, and the floors in the work rooms are scrubbed daily. The cookers, kettles, utensils, etc., are cleaned at the close of the day by the man or woman who used them last in addition to being washed between each batch. All raw materials are kept dry and well covered. Finished candies are packed immediately and placed in a cool, well ventilated stock room.

Everything is done to promote the cleanliness of the plant. There is one thing we do not do—we do not placard the factory with signs calling attention to sanitary rules and regulations. When an establishment is kept clean, a workman imbibes the feeling of cleanliness. The Board of Health requires certain signs in all food establishments and these are the only signs we put up in our factory. Hot water, steam, compressed air, electric scrubbing machines for the floors, plenty of soap, scouring powders, mops, brooms, in fact everything in the cleaning line is always on hand for the use of the employes.

Keeping my factory clean pays in cold dollars and cents because:

First—A clean factory increases production and means a smaller labor turn over. The employe can turn out more and better work in a clean, well lighted factory with clean tools, than he can in a dirty factory. People are always happier and healthier in a clean environment and this adds to the general morale of the factory.

Second—A clean factory means a higher grade of merchandise. Clean raw materials, clean tools, clean workmen, mean a better product. It looks better, tastes better, and the general public will buy it more readily than a confection put out by a concern where the sanitary conditions are not what they should be.

Third—The advertising advantages are untold and a wise manufacturer must realize the advantages and necessities from a sales standpoint of operating a clean factory. If he has his ears to the ground he will know that the public demands clean foods and no food manufacturer can disregard the demands of the public without loss. I attribute the increased demand for package goods to the unsanitary methods which exist in some of the retail stores.

Thus bulk candy business suffers accordingly.

Fourth—The psychological effect of a clean factory is by no means the least important. A clean factory not only influences the factory employes but also the executives, the sales force and the office assistants. It has a far reaching influence upon the sales of the firm. Can a salesman conscientiously push an inferior article, an article made in an unsanitary factory, a piece of candy that he would not wish his family to eat? Positively "No." The whole establishment from the head executive to the porter are happier, healthier and more prosperous in a factory where a high standard of sanitation is enforced.

And does it pay to conduct a clean factory? Summarize the advantages: happier and healthier employes, efficient labor, more production and increased sales—if these conditions do not add to your profits—what will?

Sanitation in the Confectionery Business

by B. K. Wilbur, M. D.

THE word "Sanitation" has come to be used quite generally and quite loosely of late years, but it is not a term to be trifled with. Candy manufacturers should realize that they belong in the great manufacturing division of food products, and while "Everybody likes Candy," they expect that candy to be prepared with conscientious care, especially in regard to cleanliness.

No factory can maintain constant sanitation unless preparation is made to do so. Rough walls, uneven and splintery floors, worn-out concrete, bad plumbing, miscellaneous and old clothing cannot be kept clean. The first step toward a cleanly factory, therefore, is to counteract these conditions. The walls must be smooth and in condition so they will not readily gather dust. They must be of material that can be readily cleansed. Floors must be smooth and also of such material that they can be cleaned frequently. Workers should be required to keep clean, not only as to their persons but as to their clothing. Plumbing must be sufficiently modern to allow its being kept in good condition and without pockets for the accumulation of waste and all kinds of trash and with ample facilities for washing.

Having secured conditions which are clean and which can be kept clean, all workers should be required to wear uniforms which can be washed frequently and which will protect the underclothing from the products of manufacture. In certain departments brown denim uniforms are satisfactory. In others, white uniforms are preferable. These need not be made specially, but can be purchased from stock. Our experience shows that it is most satisfactory to require workers to furnish their own uniforms and to put on clean uniforms at least once a week. Aprons, however, are furnished by the company and are issued weekly. It is extremely advisable for all girls, working in dipping and other hand process as well as those working around machinery, to wear caps, not so much to protect the hair from dust, but to protect the products from loose hair, as well as for the safety of the girls working around machinery.

No factory can be kept clean without special attention being given to this part of the business and it is just as essential as any other part. To do that it is necessary to have a requisite number of porters, whose work is to clean floors, windows, closets, toilets, etc., regularly and constantly. The cleaning of machines and keeping them clean is a proper part of the duties of the employes who operate these machines. It has been found extremely helpful to give a personal prize to the operators in each department for that department which has the best score for cleanliness during the month. This score can be based on some such plan as the following:

Cleanliness of operators	4 points
Cleanliness of machines	2 points
Cleanliness of store closets, store rooms, etc.	3 points
Cleanliness of utensils	1 point

The inspection is done by, preferably, somebody from the superintendent's office who enters the score each day; total scores being published on bulletin board or in house organ at the end of each month. A prize of somewhat larger amount is awarded the foreman, but it is necessary that each employe in that particular department should also receive some prize.

It is a good thing to have a general clean-up during the dull season, during which time the entire factory is closed and some of the operators, who would otherwise be laid off, used as a cleaning crew. Painting, white-washing, floor cleaning, etc., can be done at this time. This stimulus to cleanliness is well worth the additional expense.

The important thing to remember is that sanitation and cleanliness are not optional, but are absolutely obligatory with every food manufacturer. The time is rapidly approaching when health departments, local, state and national, will look after this matter if manufacturers fail to do so.

The Manufacturing Confectioner's TROUBLE CHART

The following trouble chart is the first of a series of tabulations of typical manufacturing problems in connection with the technical handling of various kinds of confectionery and chocolate. The charts will appear in series and are designed to not only help the production men to locate trouble but also for the enlightenment and guidance of executives who desire to make a thorough check on the technical problems as they arise.

Compiled by Adrian LeRoy

Mr. LeRoy is a practical candy man with international experience. He has been associated with many of the foremost manufacturing confectioners in the leading foreign countries doing consulting and research work.—EDITOR.

I.—Chocolate and Chocolate Goods

Chocolate has no Aroma. No Flavor.

- Bad blending of beans.
- Over roasting.
- Burnt roasting.
- Bad winnowing or husking.
- Working conches at too low a temperature.
- Conching too soon after refining.
- Insufficient alkalining.
- Over alkalining.
- Alkalining beans that should not be alkalined.
- Insufficient conching.
- Old stock beans.
- Bad Vanillin.
- Not allowing mass to age long enough before conching.
- Too close refining.
- Mass left lying about exposed.

Hand Dipped Chocolates going Grey, Spotted, Mottled, White or Streaky.

Same trouble with machine dipped goods.

- Centers chilled.
- Centers too warm.
- Dippers not stirring mass before taking out their supply.
- Using chocolate too warm.
- Temperature of room too high or too low.
- Dipping on cold marble or iron.
- Using bad butter or substitute.
- Too much shake on wire belt, causing butter to float.
- Hot chocolate.
- Thick chocolate.
- Temperature of cooling tunnel too severe or not low enough.

Gritty Milk chocolate.

Milk labumenoids agglutinate in the mouth.

Milk chocolate crumbles after a few months old.

- Too much milk powder.
- Overheated when conching.
- Insufficient refining.
- Bad powdered milk.
- Imported butter chemically treated.

Coarse, gritty chocolate. Not as smooth as usual.

(If Bausman Disc Refiner is used.)

- Rollers of refiner not running true, down at one end.
- Granite rollers pitted.
- Water circulation on steel rollers defective.
- Bad bean cleaning.
- Bad husking.
- Too much butter added to mass in malanguer.
- Refining mass wants to be drier.
- Discs too far apart. Tension springs not even.
- Chocolate kettle not working, allowing mass ingredients to separate.
- Discs need cleaning.
- Burnt beans.
- Carbonizing on disc's teeth.
- Too much butter.

Soft Milk chocolate, very little snap.

- Using too much full cream powdered milk.
- Exposing chocolate to too sudden change of temperature.
- See also "Chocolate soft on Hand-Dipped Chocolates."

Good shine on moulded chocolate bars, but grey marks under shine or a "blurry" mark across bars otherwise all right.

- Metal moulds are not the correct temperature according to temperature of chocolate.
- Moulds have been "fingered."
- Dirty or damp moulds.
- Moulds need polishing.

Moulded Bars hard to "knock out" of moulds, but are perfectly hard otherwise.

- Bad shape corners on metal moulds.
- Temperature of cooling tunnel not low enough.
- Moulding too hot.
- Moulding room too cold.
- Moulds too cold when refilled.
- Cooling tunnel not long enough, causing forced freezing.

Trouble Chart on Chocolate Goods—Continued

Plain chocolate goes crumbly.
- Damp Sugar.

Air bubbles on machine dipped goods.
- Not "resting" chocolate between series of refining.
- Chocolate Fatigued—not enough ageing before conching.

Mouldy chocolates (Bloom).
- Mouldy beans.
- Under roasting.
- Dipping damp centers.
- Exposing chocolate to too sudden change of temperature.
- Premature bean picking at the Island plantations.
- Excessive rubber growing among Island plantations.
- Damp storage.
- Beans affected by sea voyage.
- Too much steam in chocolate department.
- Excessive amount of moisture in chocolate.

Chocolate Bars are very brittle, breaking easy in wrapping machine, cracking on their own account after a few hours moulded.
- Overheating in conch.
- Overheated batch passed through cooling tunnel of too low temperature.

Chocolates taking too long to set or dry.

Drying greasy and sweating, but NOT grey. Coming through enrober wet.
- Refrigeration too cold.
- Adding real hot butter to cold coating.
- Moisture in chocolate.
- Bad storaged butter.
- Too much moisture in refrigeration.
- Enrober room or dipping room too warm and chocolates coming into contact with too sudden drop in temperature.
- Chocolate too hot.
- Using too much butter substitute.
- Defective butter.

Chocolate soft on hand dipped chocolates—No snap.
- Imported butter over alkalined.
- Using too much nut paste as a flavoring.
- Moisture in chocolate.
- Butter substitute.

No lustre or shine on hand dipped or machine dipped chocolates.
- Temperature of chocolate wrong.
- Temperature of room too high or too low.
- Chocolate has been previously overheated.
- Too much forced draught.
- Moisture in chocolate, probably leaky steam pipe, cracked chocolate kettle or steam leak in conche.
- Damp storage for coating or butter.
- Not enough shake on enrober wire belt.

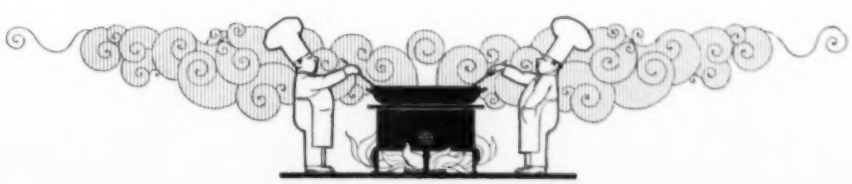
Walnut halves fall off chocolates in few days after made.
- Walnuts have been previously overheated and have become greasy.

Chocolate has unusual taste, very bitter; black specks in chocolate.
- Forcing bean roasting too rapid.
- Burnt roasting.
- Bad cleaning or husking.
- Too much or bad vanillin or coumarin.

Chocolate has soapy taste. Mouldy odor. Sour taste.
- Over alkalined.
- Mouldy beans.
- Rancid butter.
- Old stock beans.
- Using imported butter over alkalined or treated.
- Storing mass or ingredients near foreign odors.

Leaky chocolate centers.
- Faulty dipping.
- Over doctored centers.
- Low boiling.
- Damp centers.
- Too much flour or starch used when hand rolling.
- Chilled centers.
- Too much albumen in hand rolls.
- Chocolate too thick.
- Cooling chocolates too quick—contraction too great.

Chocolate Ginger leaks.
- Not panned with chocolate before dipping.



Plant Cleanliness and Sanitation

The Gist of Interviews with Several Leading Manufacturers of Confectionery

by Ralph G. Wells

HIGH sanitary standards are synonymous with success in the candy business. As a rule the plants of the leaders in this industry are models of good working conditions. As in other lines, unsatisfactory methods are the "hall-marks" of the unssuccessful, incompetent manufacturer and second-rate firms.

Handling of Candy by Distributors

There are probably few food products made under more sanitary and wholesome conditions than exist in the plants of the majority of quality candy manufacturers. If candy were treated with as much care after leaving the factory as it is before shipment, the product of the better class of firms would reach the consumer in almost perfect condition. Not infrequently the distributor stores his stock in poorly ventilated rooms. In other cases wagons or trucks containing goods for distribution are left standing over night in stables or garages.

Then there is the retailer who exposes candy for sale in uncovered counters, on the sidewalk, street corners, or open stores. Even this is not as bad as the shop where there is little ventilation and the candy is piled in open trays, where all sorts and conditions of people are coming and going throughout the day. In a city of fifteen or twenty thousand population, the writer recalls a retail store where open boxes and buckets of bulk candy stood on the floor at about the right height to be brushed over by the bottoms of coats and skirts as the customers passed back and forth.

To be consistent in this problem of sanitation, attention should also be given to the paper bags, boxes, and other containers used by retailers. Many of these are made in factories where little thought is given to sanitation. Although these are not food products, the fact that they are used in dispensing foods should place them in the same category. Paste and glue are more fertile germ breeders than pure sugar.

Manufacturers should use their influence with distributors and retailers to sell them the idea of maintaining the same high standards in the distribution and dispensing of candies as prevail in the factories.

Unfortunately, however, some candy reaching the consumer is made in small out-of-the-way lofts or shops where conditions are far from satisfactory. In their efforts to watch economy, such shops cut every corner and do not maintain their conditions on the same high plane as is regarded essential by the larger firms. Legitimate manufacturers who are producing under wholesome conditions should be protected against such unfair and unscrupulous competition.

10% to 20% of Pay Roll for Cleanliness

Figures secured from plants who pride themselves on their sanitary standards indicate that anywhere from ten to twenty per cent of their pay roll is expended on keeping the plant clean. The figures will necessarily vary, depending on the type of building and the age of equipment. The higher figure is from a plant which included in cleaning costs the time spent by workers in cleaning and washing up their own work places and every other form of cleaning which could not be charged direct to the job. The plants reporting ten per cent include only the cost of workers assigned to direct cleaning work, and does not account for the time spent by employes in looking after their own equipment.

Thus, it will be seen that plants maintaining better conditions are adding anywhere from ten to fifteen per cent more to their labor costs than the unscrupulous manufacturer who neglects this item. It is certainly unfair competition, and the consumer should be brought to realize that when he is buying cheap candy he is not getting that degree of purity and cleanliness that he is entitled to and which he would get by securing candy which is made by reputable manufacturers.

Why Preference Is Given to Employes Who Are Instinctively Clean and Orderly

A survey of methods used in various plants to insure sanitation indicates that success in maintaining the desired standards depends more upon the management's ability to instill the idea of cleanliness in employes and to secure the wholehearted co-operation of foremen and other supervisors than upon anything else. The mental attitude of executives, foremen and workers towards this problem is the most important factor in the situation.

As in all things, an ounce of prevention is worth tons of soap. One man bases his campaign of prevention on personal training and instruction. In hiring, preference is given to workers who seem to have instinctive habits of cleanliness. By insisting on the constant maintenance of standards he has gathered about him a large force of employes who like to have

everything in ship-shape order. Careless and heedless workers are soon eliminated. The greatest compensation for strict adherence to high standards is that the better type of workers prefer his plant to those where conditions are less satisfactory.

Like attracts like. A clean, wholesome plant attracts clean, wholesome operatives who appreciate good conditions and proper methods. This may sound idealistic, but actual experience in a number of plants proves beyond doubt that good working conditions and sanitary methods attract the more desirable type of workers. Employes of character are unwilling to work in a slip-shod plant. Furthermore, better work is done where good conditions prevail. Nothing promotes efficiency and effectiveness in manufacturing food products so much as the rigid maintenance of high standards at every step.

It is interesting to watch the development of new employes in a well-organized plant. At first they may seem to chafe a little under the strictness, but soon grow to like it and unconsciously reflect in their own habits and dress the conditions prevailing in the plant. One employer states that he would be willing to wager that the influence of the well-kept plant extends itself through employes into their homes. He claims that by standing on the street as employes are leaving a factory he can tell by their appearance what the factory is like on the inside.

In discussing this problem of sanitation manufacturers have made various suggestions as to specific methods to be used in securing and maintaining plant cleanliness. For instance:

Preventive Measures

Several indicated that the first step in sanitation begins in the planning of the layout and arrangement of departments and in selecting and installing the equipment so that the cleaning could be done easily and quickly. Another point that has stood out clearly during these conversations is the importance of not allowing rubbish or dirt of any kind to accumulate. Each work place should have near it a receptacle easy of access. Employes should be required to put their rubbish in these containers at frequent intervals and not be allowed to permit it to accumulate or fall on the floor.

Floors

Experiments have been made in one factory with nearly every type of flooring, and as a result they have come to the conclusion that for boiling rooms and similar departments quarry tile laid in cement or concrete is the most desirable. Concrete is too porous and, like many other types of flooring, will not stand up under the wear and tear of trucking and the moving about of boxes and barrels.

In rooms where heavy metal containers or cans are used. sheet metal floors have proved the most serviceable. They are easily cleaned, withstand the wear, and do less damage to containers than any other form of flooring. Concrete floors are satisfactory in stock rooms and store houses, where they will not become coated with cocoa-butter and where they will not be chipped by the banging of metal containers and tools.

Battleship linoleum has proved satisfactory in fancy packing rooms and other departments where there is little wear other than the passage of employes, and where they can be cleaned with an ordinary mop.

Various forms of plastic flooring have been tried, and while they are satisfactory for a time, none has been found which will not give out sooner or later under heavy wear or the continual passage of trucks. Wood floors can hardly be regarded as strictly sanitary in work rooms. They are seldom used except in hallways, stairs and offices.

The majority of plants find live steam, hot water, soap, or any good cleaning compound as the most satisfactory method of keeping floors clean. It is an advantage to have all floors which must be scrubbed with hot water laid so as to drain into sewers or into scuppers at the side of the room. This facilitates the drying and removal of water.

One plant finds the so-called type of sanitary bases rather unsatisfactory because few of them are high enough to give easy access to the floor under the equipment. For this reason, unless the equipment stands up several inches from the floor, it is the practice to imbed the base of the equipment in cement or concrete, thus sealing it hermetically so that not even water can get under it. This simplifies the cleaning in many rooms, and the plant management has found that when it is necessary to relocate the equipment it is not difficult to chip it out of the cement and fill in the hole with concrete or some form of plastic flooring.

In rooms where conditions will permit, cleaning should be done with high pressure live steam. The reason for this is that the use of live steam at a high pressure leaves less moisture in the air than if a lower pressure were used. Furthermore, the work is done quicker and the heat aids in the drying. Under this method the floor is first gone over with water and cleaning compound, the live steam is then turned on, and it is only a few minutes until the floor is immaculate.

In many of the plants all of the scrubbing is done by hand. For various reasons few have found scrubbing machines practical unless there was a large open area to be scrubbed. One plant states that floors impregnated with cocoa-butter are too slippery to permit the use of any mechanical cleaning device. Without exception all floors should be cleaned daily and brushed up at frequent intervals. In order to protect machines, equipment, and work in process at nights and during cleaning periods, spe-

(*Continued from page* 38)

The above photograph of the Blanke-Wenneker plant speaks for itself. The statement opposite from the president of the company contains an interesting and significant conviction on the importance of sanitary wearing apparel:

"While we know it is the hope and desire of every manufacturer of quality products to keep Sanitation and Plant Cleanliness to the highest standard and while we all for years have preached this idea and continue to do so to our help we believe that there is nothing that helps bring about this desired effect that a standardized washable uniform for the factory workers will do. In other words, uniform attire conveys the idea and thought of cleanliness and as a general rule it has the effect upon the wearer of trying to live up to what the uniform represents. We find it psychological, and quite effective.

BLANKE-WENNEKER CANDY CO.,
Albert F. L. Schmidt, President."

Plant Cleanliness and Sanitation

(*Continued from page* 35)

cial types of covers have been devised and are put in place each night. In some cases covers are mounted on shade rollers and attached to the equipment, so that when the work is to be covered it is an easy matter for employes to pull these out and fasten them in place.

Considerable attention should be paid to waste containers. A plentiful supply of containers for waste and scraps, emptied at regular intervals, will help in keeping floors clean.

Walls and Ceilings

These should be refinished regularly with a paint which will give a high gloss finish. Such walls do not need to be brushed down as frequently as those with a rough surface. Certain firms prefer metal ceilings, and cover some portion of their walls with galvanized iron sheeting. This is especially serviceable as a protection for walls and corners from passing trucks or any other objects which may strike against them.

Breaks and cracks in walls or ceilings should be repaired promptly, and every possible refuge for insects kept hermetically sealed. This applies especially to baseboards and angles at the juncture of walls and floors.

Windows

The windows in many parts of a plant are double, as air in the rooms comes in only through special ventilating and air-conditioning apparatus. Any windows that are opened frequently should be screened except in upper floors of high buildings. All windows should be kept clean to admit all of the light that they can. Sunlight is the best known purifier and cleanser.

Pests

Insects and rodents are difficult problems in any plant. No matter how immaculate it may be, they will be brought in from the outside by incoming shipments. Rats seem to crawl through solid walls. Eternal vigilance is the only answer to this problem. They must be kept out at any cost. A moment's relaxation and they will gain a dangerous foothold. Unwelcome visitors will appear in spite of all precautions. In larger cities there are men specializing in extermination of such pests and many firms use them, but these men cannot function successfully unless they have the entire and wholehearted cooperation of the working force. Every possible aperture must be closed. Anything which will attract or provide food must be kept closed up. If the manufacturer decides to depend upon his own organization to keep the factory free, the responsibility for doing it should be placed definitely upon one man.

Table Tops

One firm has found battleship linoleum tops the most satisfactory for certain types of work benches, as these wear well and can be easily wiped off and kept clean.

Machines and Equipment

As a general rule, each workman is expected to keep his own machine clean, except that in certain departments one or two men are responsible for going over machines continually, wiping them off, and keeping them free from dust or any accumulation of materials that may spill over. Kettles are, of course, washed out after each batch. Workers in all parts of the factory should be required to leave their machines and work places in shipshape order before going home at night. There are a few places where it is necessary to allow a few minutes before closing time for cleaning up if employes are required to keep their work places in good condition at all times.

Rules for Employes

Much has been written on personal cleanliness of workers, and it is, of course, a subject which deserves strictest attention. Here again the first steps in personal cleanliness begin with the selection of workers of the right type. The second step is in training and instructing them in the reasons for and methods of keeping clean. Ample toilet facilities should be provided and each worker required to observe the highest standards of personal cleanliness. Uniforms and caps should be provided, and lockers where employes may hang their street clothes. Various types of wash basins have been tried, but the shower type, where a continuous stream of water of the right temperature runs into a trough, is considered the most sanitary.

While it is impraticable to check up the cleanliness of each employe every day, those in charge of toilets and lockers, and the supervisors of each department, should keep careful watch over the habits of new employes. Older workers who have proved themselves dependable in this respect do not need to be checked up so frequently. This makes it possible to give more attention to doubtful ones and to the newcomers.

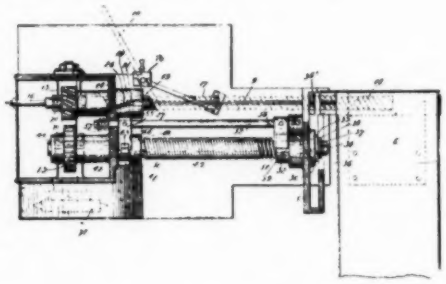
Health and Medical Service

There is a growing tendency in the industry to require new employes to pass a physical examination or bring in a satisfactory health certificate from a practicing physician of recognized standing. Many of the larger plants have well-organized health departments with one or more full-time nurses. Some firms have a full-time physician, while others arrange with some local practicing physician to supervise their health work. Where a plant does not have a full-time physician, caution should be exercised to see that the nurse does not undertake to give medical treatment, as one or two firms have found themselves involved in law suits because it was proved that their nurses were practicing medicine without a doctor's certificate. A nurse may give first aid and such treatment as is directed by a practicing physician, but if she prescribes medicine or gives medical treatment

(*Continued on page* 41)

WHAT'S NEW?

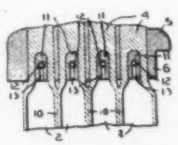
1,518,805. Candy-Curling Machine. William P. McGraw, Boston, Mass., assignor to Noble Jackson Company, Boston, Mass., a Corporation of Massachusetts. Filed Sept. 27, 1922. Serial No. 590,984. 10 Claims. (Cl. 107—4.)



1. In a machine of the type specified, the combination comprising a rotary spindle on which the work is curled, means for rotating the spindle, means for displacing the work along the spindle to project in part beyond the end of the spindle during the rotation thereof, a knife for severing the work thus projecting, an elastic member releasable when distorted to operate said knife at determinate intervals during the operation of the machine, and means for distorting said member at determinate intervals during the operation of the machine.

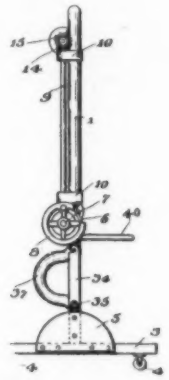
8. In a machine of the type specified, the combination with a work curling and displacing mechanism and driving mechanism therefor, of a knife for severing the work as displaced, a rotary mounting for the knife, a releasable stop, an elastic member operatively connected to the knife and operating when distorted to actuate the knife on the release of the stop, means whereby the elastic member will be distorted by the driving mechanism, and means for releasing the stop at determinate intervals when the elastic member is distorted.

1,518,587. Method of Making Candy. Philip B. Laskey, Marblehead, Mass., assignor to The Chocolate Sponge Co., Inc., New York, N. Y., a Corporation of New York. Filed Aug. 1, 1922, Serial No. 579,002. Renewed Nov. 8, 1923. 5 Claims. (Cl. 107—54.)



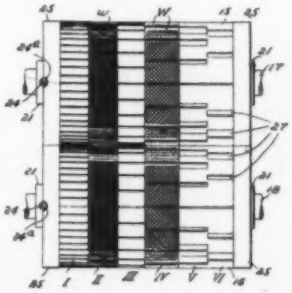
4. The process of making porous candy which consists in extruding through a die a plurality of separate streams of candy material in spaced relation and expanding the streams transversely after they have been delivered from the die to bring them into contact with each other.

1,520,047. Device for Operating Candy Kettles. Ray C. Alden and Frank Foss, Seattle, Wash. Filed July 14, 1923. Serial No. 651,606. 1 Claim. (Cl. 214—1.)



In a device for lifting and moving candy kettles the combination of a pair of spaced bases, rollers mounted on said bases, a frame carried by said bases, a shaft revolubly mounted across the top of said frame, a cross bar slidably mounted below said shaft and friction rollers carried at opposite ends of said cross bar and adapted to engage the walls of said frame, adjustably pivoted arms attached to said cross bar, jaw members carried at the lower ends of said arms adapted to engage and grip the handles of a kettle, means for raising and lowering said cross bar, means for tilting said kettle and means for holding said kettle in adjusted position.

1,518,260. Rolls for Candy-Making Machines. Robert S. Hislop, Racine, Wis., assignor to Racine Confectioners Machinery Company, Racine, Wis., a Corporation of Wisconsin. Filed Nov. 23, 1922. Serial No. 602,765. 18 Claims. (Cl. 107—23.)



1. A roll for candy making machines having about its periphery a plurality of fixed longitudinal knives of substantially equal length and a number of different forms.

15. A roll for candy-making machines having secured to its periphery a series of longitudinally extending knives, different knives of the series being differently formed at corresponding portions of their length to provide for different lenghts to cut off at different longitudinal portions of said roll.

Industrial Health Conservancy Laboratories
of Cincinnati, Ohio

The following statement about the personnel and work of The Industrial Health Conservancy Laboratories is made herewith at our request because we believe they are in position to be of valuable service to candy manufacturers in connection with the establishment of proper standards of sanitation and other services affecting the industrial and economic health of the confectionery industry.—EDITOR.

THE Industrial Health Conservancy Laboratories were organized in 1920, to work in industrial problems related to health, safety and sanitation. For a long time activities of this kind were regarded by industry as essentially humanitarian and the word "Welfare" came into use, and in many places into disrepute and distaste. More recently industry has learned that provisions for health conservation of workers, for the sanitation of the work places, and for the purity of products, are nothing more than good business, and that the values derived therefrom by industry are direct and always out of proportion to the expenditure of moneys provided.

Wit this discovery there came to many industries the realization that reliable and competent services of this character were difficult to obtain. Large manufacturing organizations were warranted in seeking out high-class personnel and putting them to work on a full-time, permanent basis. All over the country are many examples of economic and humanitarian achievement in large industries. Smaller plants, particularly those having less than 400 employes, were not warranted in the large expenditures necessary to secure specially trained physicians, safety engineers, nurses, sanitarians, etc. Many plants have resorted to the use of the neighborhood physician, not realizing that such physicians, however honest and competent in the care of injured and sick workers, are not trained in the intricate problems of occupational diseases, industrial hygiene, industrial sanitation, labor turnover, job placement, etc. The neighborhood physician, on this account, is of limited worth to industry. For the distinct purpose of working in this field the Industrial Health Conservancy Laboratories have been established.

Experience

The experience of this organization has been derived from work in practically every phase of industrial health personnel problems. One week's work may take them into court as expert witnesses, as an aid to some manufacturer in the combating of an unwarranted claim against him, made by some disgruntled employe, or the family of some worker whose death they believe should be associated with the worker's employment. Another period of work may have been directed to the checking of definite trades disease, such as benzol, zinc, or arsenic poisoning.

A recent experience that has come to the attention of this organization was the occurrence of twelve hundred cases of a single disease directly traceable to a chemical employed in an Ohio factory. Naturally, the entire personnel was on edge, production was almost at a standstill, and a strike of all employes was imminent, all of which necessitated prompt and effective service. In other instances new processes, before being placed on the market or utilized on a production basis, are submitted to this organization for experimental procedures to determine possible harmful effects on engaged workers. On still other occasions the principals of this organization are called into industry for tours of inquiry to establish what practical things may be done throughout the plant in question, that may be of value in the conservation of the health of the works, increasing the purity of product, protection against safety hazards, etc. Such activities may involve an inquiry into the lighting facilities, heating system, care of injuries, periodic health examination, investigation of mutual aid societies, liability insurance problems, job placement, eyesight conservation, etc. These are the types of problem that occupy the time, interest, enthusiasm and endeavors of the Industrial Health Conservancy Laboratories.

Personnel

Since the work of this organization touches at times the worker and labor problems, the manufacturer and legal problems, the public and problems of sanitation, etc., it is wholly necessary that the personnel used by us have those qualities of discretion and integrity that will enable them to fit into these diverse activities in a manner that will upset none and as far as possible work for the good of all concerned. It is easily recognized, when given a ticklish situation in some factory wherein the working group is panicky over some alleged harm being done to workers using some objectionable trade process, that the mal-activity of one of our workers could easily be the spark that would demoralize the workers or antagonize the manufacturer to the point of non-co-operation when the situation merited his best co-operation.

Much experience in this field has led to an

organization so qualified as to be acceptable to industry. Altogether the organization has readily available to itself twenty-six workers, the actual contacts with the problems are carried out by one or more of three persons. These three persons through varied experience endeavor to grasp the situation involved, and wherever necessary translate these problems to other workers competent in technical fields, such as chemistry, bacteriology, toxicology, statistics, etc.

Of these three persons, Dr. Carey P. McCord is the head. This worker is a physician, for manys years a university and medical college professor, engaged in problems of sanitation and public health. His researches have brought him into close contact with industry. His many publications on occupational diseases and sanitation have won for him a distinct place in this professional field, and, in addition, have proven of stimulus and worth to physicians and sanitarians the country over. Through his connection with the Industrial Health Conservancy Laboratories this experience is made available to the clients of this organization.

The second medical director, and one of the principals of the organization, is Dr. William E. Brown, whose industrial, medical and sanitary training has been gained in Harvard University, both as a student and as a teacher. Earlier work in the Massachusetts Institute of Technology, was directed towards just such problems as constitute his present field of activities, industrial service, the checking of epidemics, the making of chemical tests, the conducting of toxicologic inquiries, court work, etc. He has also had charge of the medical and surgical work for a large industrial concern in New Jersey. Such qualifications make him invaluable to our organization and to those organizations served by us.

The third principal is Mrs. Dorothy K. Minster, whose special field of work is liability insurance, industrial commission activities, statistical methods, records, systems, etc. Wherever general inquiries are made as to conditions, etc., rarely does it come about that there is no opportunity for Mrs. Minster's services. Time and time again her inquiries have led to lessened insurance rates, reclassification to the benefit of industry, improved medical records, etc.

The Industrial Health Conservancy Laboratories are available to the individual worker suffering from disease growing out of industry, are available to the manufacturer in his various problems of occupational disease, factory sanitation, industrial commission relations, for expert testimony, etc. The laboratories are available to associations of manufacturers or to industrial groups in their endeavors to better the entire trade, or to go before their public with hands entirely clean in terms of proper work conditions and proper protection for workers.

Whatever be the service rendered by the Industrial Health Conservancy Laboratories much experience and professional integrity give assurance of faithful performance of every endeavor.

Plant Cleanliness

(*Continued on page* 38)

on her own responsibility she is exceeding her authority and may involve the firm in serious complications. Employes should be encouraged to visit the medical department freely, and no one who has the least suspicion of any communicable illness should be allowed in the plant.

In the last analysis, cleanliness and sanitation is a matter of mental attitude. Example speaks louder than words. If the management is sincere in its efforts to obtain a high degree of sanitation and will study the problem carefully and thoroughly, establishing standards which can be maintained, and insist on their observance, it will soon find the employes falling in line, keeping step and supporting the program wholeheartedly and with enthusiasm. It may be necessary to give special talks, to have special demonstrations, and by one means or other bring home to every member of the organization the necessity of careful and painstaking attention to details which affect the sanitary standard of the plant and its products.

How We Do It at Loft's, New York

(*Continued from page* 19)

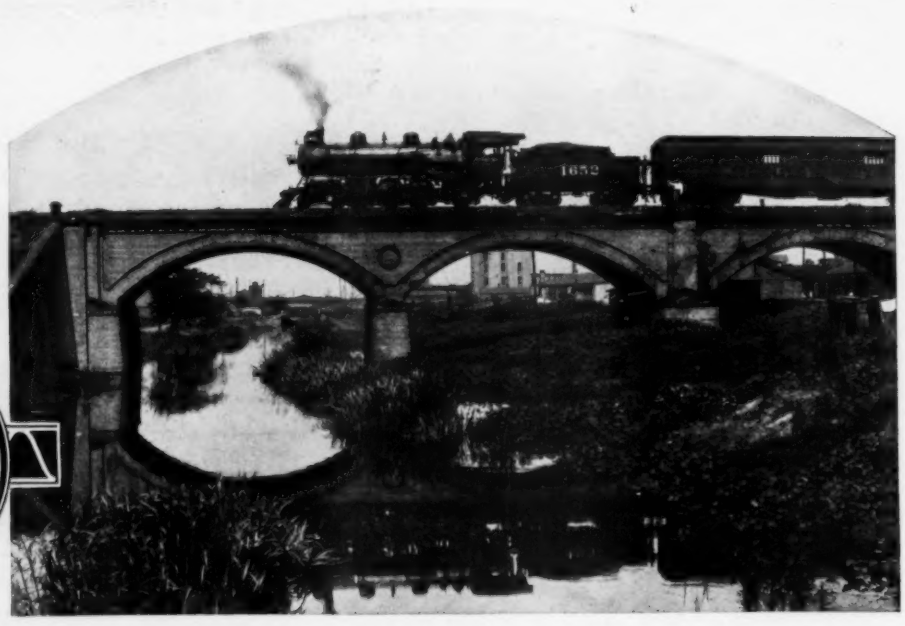
purpose for cleanliness backed up by an eternal vigilance.

It is this thing which caused Mr. Alfred W. McCann, the most particular expert on food preparation in the country, to say after a four-hour inspection of the Loft buildings:

> *"I am amazed at the magnitude of your plant. I am absolutely astounded at the decency of your methods."*

Long Island Factory, Loft's, Inc.

This arched bridge of the Central o Georgia Ry was built 1856 and although locomotive tonnage has since increased over 400% it has not been necessary to strengthen it.



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Thousands of arches in Mid-West corrugated fibre board packing boxes offer identically the same resistance to pressure, weight, vibration and shock that the arched bridge does to a heavy pounding passenger train. The high arched walls of a Mid-West box are cushions that more effectually absorb abuse. Reduced shipping overhead, less smashage, fewer "kicks" from consignees and all-around saving in labor, storage and handling are advantages that follow their use.

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FREE and WITHOUT OBLIGATION to you we will send a packing and box expert to your factory to analyze every shipping angle, and, if required, build a shipping container around your product that will *save you money*—30% to 70%. Fair enough, isn't it? Mail your request today.

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